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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,962	06/27/2003	Seiji Horie	019519-395	4849

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,962

Applicant(s)

HORIE ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) 4-9 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/27/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-3 in the reply filed on 3/7/05 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 4-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 3/7/05.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Horie (U.S. 2003/0225188).

Horie discloses oil-based ink for ink jet printer wherein the ink comprises colored resin particles obtained by dispersion polymerization of monofunctional polymerizable monomer (M) and copolymerizable monomer (B) with coloring component fine particles comprising a surface-treated coloring agent, which are dispersed in non-aqueous solvent having dielectric constant of 1.5-20 and surface tension of 15-60 mN/m as seed particles, in the presence of dispersion stabilizer (P) soluble in the non-aqueous solvent and a polymerization initiator. It is disclosed that the monofunctional polymerizable monomer (M) includes monomers containing fluorine atom. Further, the surface-treated coloring agent is an organic or inorganic pigment coated with polymer. Additionally, it is disclosed that the coloring component fine particles are those dispersed with pigment dispersant in the non-aqueous solvent and have particle diameter of 0.01-1 μm (paragraphs 1, 19-21, 31, 37-38, 56-57, 67, 70, 71 (line 14), 72 (line 5), 76-77, and 90).

In light of the above, it is clear that Horie anticipates the present claims.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Takao et al. (U.S. 2002/0077383).

Takao et al. disclose oil-based ink comprising non-aqueous solvent such as hexane or silicone oil, i.e. polydialkylsiloxane, and colored resin particles that are obtained by reacting surface-treated pigment with silicone-containing copolymer obtained from monomers including monomer containing silicone atom. It is disclosed that the silicone-containing copolymer is adsorbed to the surface of the pigment and disperses the pigment in the form of particles of 0.01-0.3 μm in the non-aqueous solvent (paragraphs 1, 11-12, 23, 25, and 36). Although there is no

explicit disclosure of the dielectric constant or surface tension of the non-aqueous solvent, given that Takao et al. disclose solvent identical to that utilized in the present invention, i.e. hexane or polydialkylsiloxane, it is clear that the solvent would inherently possess dielectric constant and surface tension identical to that presently claimed.

There is no disclosure in Takao et al. that the colored resin particles are produced by dispersion polymerization of polymerizable monomer and monomer having silicon atom with surface-treated coloring agent in the presence of dispersion stabilizer and polymerization initiator as presently claimed.

However, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product” *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Therefore, absent evidence of criticality regarding the presently claimed process and given that Takao et al. meet the requirements of the claimed product, i.e. colored resin particles, it is clear that Takao et al. meet the requirements of present claims 1 and 3.

In light of the above, it is clear that Takao et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (U.S. 6,197,647) in view of either EP 1205815 or Tsubuko et al. (U.S. 4,360,580).

Kato et al. disclose oil-based ink for ink jet printer wherein the ink comprises resin particles obtained by dispersion polymerization of two monofunctional monomers which are dispersed in non-aqueous solvent in presence of dispersion stabilizer and polymerization initiator. It is disclosed that one monomer contains fluorine atom. The non-aqueous solvent possesses dielectric constant of 3.5 or less. It is also disclosed that the ink contains coloring materials that are contained in the above resin particles (col.1, lines 8-10, col.2, line 55-col.3, line 4, col.6, lines 52-65, col.7, lines 50-54, col.8, line 38, col.16, lines 14-17 and 30, col.26, lines 34-40, col.28, lines 34-43, col.28, line 65-col.298, line 6, and col.43, lines 1-13). Although there is no disclosure of the surface tension of the non-aqueous solvent given that Kato et al. utilize solvent identical to those utilized in the present invention, i.e. those known under the trade name Shellsol 70, Shellsol 71, Isoper E, Isoper G, or Isoper H, it is clear that the solvent would intrinsically possesses surface tension as presently claimed.

The difference between Kato et al. and the present claimed invention is the requirement in the claims of (a) surface treated pigment and (b) product used to produce the colored resin.

With respect to difference (a), EP 1205815, which is drawn to oil-based ink, discloses the use of pigment surface treated with polymer in order to improve the dispersion stability and charge characteristics of the ink (paragraphs 1, 12, 14, 20, and 21).

Alternatively, Tsubuko et al., which is drawn to oil-based composition disclose the use of pigment coated with polymer in order that the coloring agent does not easily agglomerate and is superior in dispersability such that the composition possesses excellent storage stability (col.2, lines 9-11 and 49-55, col.2, line 67-col.3, line 2, and col.4, lines 31-43).

In light of the motivation for using surface treated pigment disclosed by EP 1205815 or Tsubuko et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such surface treated particles in the ink of Kato et al. in order to produce ink with improved dispersion stability and charge characteristic or, alternatively, ink with excellent storage stability, and thereby arrive at the claimed invention.

With respect to difference (b), Kato et al. disclose process for making colored resin wherein the colorant is dispersed with dispersant in non-aqueous solvent and then the pigment dispersion mixed with resin, however, there is no disclosure of process as presently claimed.

However, although neither Kato et al., EP 1205815, or Tsubuko et al. disclose process for making colored resin as presently claimed, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product” *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Therefore, absent evidence of criticality regarding the presently claimed process and given that Kato et al. in view of either EP 1205815 or Tsubuko et al. meet the requirements of the claimed product, i.e. colored resin particles, it is clear that Kato et al. in view of either EP 1205815 or Tsubuko et al. et al. meet the requirements of present claims 1-3.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Podszun et al. (U.S. 4,521,505) disclose liquid developer comprising colored resin and process for producing the colored resin which comprises adding monomer mixture to dispersion comprising stabilizer, pigment, and non-aqueous solvent wherein the non-aqueous solvent has volume resistance of at least 10^9 ohm-cm and then polymerizing in the presence of initiator. However, there is no disclosure that the pigment is surface-treated and no disclosure that the monomer contains silicon atom and/or fluorine atom as presently claimed.

Nishizawa et al. (U.S. 5,607,808) disclose liquid toner or ink comprising colored resin particle prepared by dissolving copolymer in non-aqueous solvent to prepare solution, mixing the solution with dispersant in the presence of pigment including modified pigment coated with resin, and removing solvent, however, there is no disclosure of dispersion stabilizer as required in the present claims or of polymerizing monomer in the presence of dispersion stabilizer and thus, no disclosure of colored resin as presently claimed. Further, there is no disclosure that the monomer contains silicon atom and/or fluorine atom as presently claimed.

EP 684261 discloses colored resin produced by mixing monomer, modified pigment, and stabilizer and then polymerizing in the presence of initiator, however, there is no disclosure or suggestion of non-aqueous solvent as presently claimed. Rather, the monomer and modified pigment are dispersed in water. Further, there is no disclosure that the monomer contains silicon atom and/or fluorine atom as presently claimed.

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Fuller et al. (U.S. 5,278,016) disclose toner comprising core-shell polymer wherein the core contains pigment and resin and the shell contains polymer obtained from fluorine monomer.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
5/20/05